

Bottles

There are four important characteristics for dating bottles:

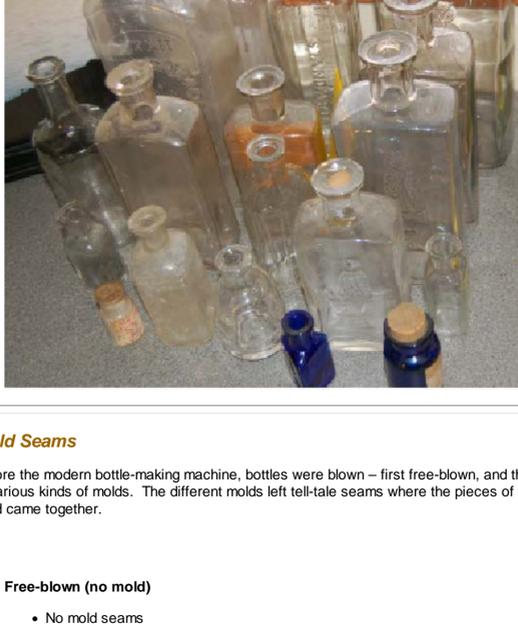
-**Mold Seams**

-**Finish Types**

-**Closures**

-**Glass Color**

Because bottle-making technology changed over time, it is often possible to determine roughly when a bottle was made by looking at one (or more) of these attributes. Of course, any labels or embossed lettering are potentially helpful, as well.



Mold Seams

Before the modern bottle-making machine, bottles were blown – first free-blown, and then in various kinds of molds. The different molds left tell-tale seams where the pieces of the mold came together.

Free-blown (no mold)

- No mold seams
- Asymmetrical and non-uniform
- Up to about the 1860s in the archaeological record

Simple Two-piece mold ("Hinged mold")

- Mold seam extends from just below finish, down the neck and side, across the bottom, and up the other side
- Symmetrical, uniform shapes
- May have embossed lettering on body, especially after 1869
- Ca. 1810-1880

"Cup" mold

- Mold seam on each side that extends from just below the finish down to the edge ("heel") of the base
- Most-common technology in the late 19th and early 20th centuries (ca. 1850s-1920s)

Post mold

- Bottle made in a three-piece mold with separate base plate
- Side seam continues onto base, then is interrupted by the circular (sometimes oval) post
- Dominant mold type used between about 1870 and 1900
- 1840s–early 1900s (sometimes later)

Ricketts mold

- No mold seams on body; horizontal seam around circumference where body joins shoulder, and vertical seam part-way up each shoulder
- Often used for liquor and pharmaceutical bottles
- 1820s–1920s

Turn mold

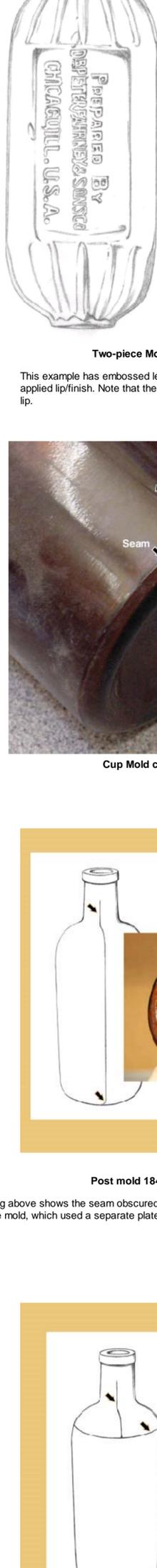
- Bottle turned while in mold, obliterating seams
- Often used for wine/champagne and brandy bottles (usually dark green)
- No embossed lettering; glass highly polished from turning in mold
- Ca. 1870–World War I

Automatic bottle machine

- Bottles made by machine, rather than blown
- Seams run all the way up the bottle and over the finish
- Made in large numbers beginning after World War I (though the first machine was invented in the 1890s)



Free-blown (no mold)
Prior to the 1860s



Two-piece Mold ca. 1810-1880

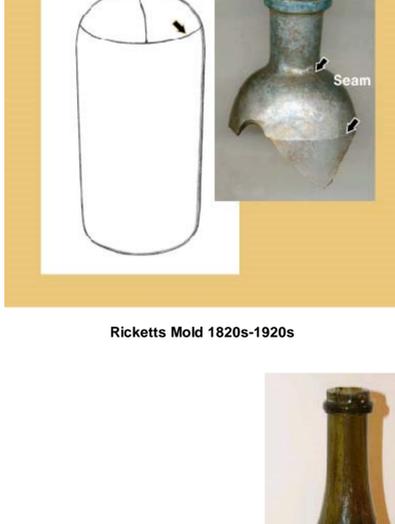
This example has embossed lettering on the body and a hand applied lip/finish. Note that the seam ends just below the applied lip.



Cup Mold ca. 1850s-1920s

Post mold 1840s-early 1900s

The drawing above shows the seam obscured by an applied lip. This is a "post-bottom" three-piece mold, which used a separate plate to form the circular base.



Ricketts Mold 1820s-1920s

Turn Mold ca. 1870-World War I

No mold seams.



Automatic Bottle Machine ca. World War I - Present

Bottle Finishes

The technique for making the lip or "finish" of the bottle also changed over time, and can help determine when a particular bottle was made.

Sheared lip

- Bottle neck stretched and cut, end ground or re-fired to make smooth
- Bubbles in glass also will be stretched and elongated; vertical stretch marks visible on neck
- Pre-1860s

Hand-applied finish

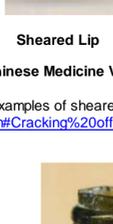
- Bottle re-heated and ring of glass applied to neck by hand
- Ring very asymmetrical, sometimes "globby"
- Ca. 1840-1860

Lipping tool

- Applied ring of glass smoothed into a more-uniform shape using a hand-held lipping tool
- Striations around circumference of neck from lipping tool; mold seam stops at neck (obliterated by lipping tool)
- After 1856

Automatic bottle machine

- Entire bottle, including finish, made by machine
- Lip completely symmetrical and even
- Mold seam runs over lip
- After World War I



Sheared Lip

(Chinese Medicine Vial)



"Glob-top" Finish

See other examples of sheared lip finishes at http://www.blm.gov/historic_bottles/finishes.htm#Cracking%20off%20&%20Shearing



Wine/Champagne Finish Done with a Lipping Tool



Three Examples of the Brandy/Whisky Finish

The brown bottles show horizontal striations from lipping tools.

Bottle Closures

The way a bottle was sealed can sometimes help date it. Here are a few of the more-common types of bottle closures (note that some closures, like crown caps and screw-caps, are still made today, making them less useful for dating).

Interior-threaded

- Screw-in top with plug inside bottle
- Interior threads on bottle finish
- 1870s-1900

Exterior-threaded ("screw cap")

- Screw-on top with cap outside bottle
- Exterior threads on bottle finish
- Mid-1880s-present (threads standardized after 1924); metal caps on early examples, metal or plastic after 1930s

Hutchinson "spring" stopper

- Rubber gasket inside bottle neck, with metal-loop handle
- Stopper could not be removed from (intact) bottle
- 1879-1915

"Lightning" stopper

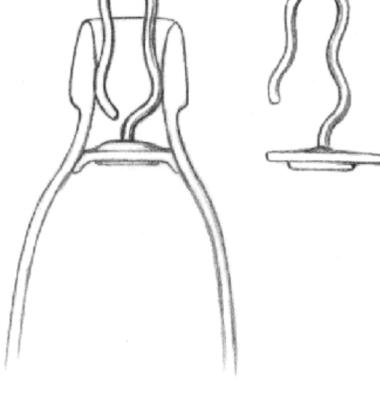
- Ceramic plug held in place by metal loop attached to metal ring around bottle neck
- Bottle finish with wide, prominent lip to hold ring in place
- 1882-1920s (still used, but not in large numbers - think Grolsch Beer)

"Crown" cap

- Metal, inverted-crown-shaped cap
- Bottle finish with narrow ring at top to hold cap
- 1892-present



Exterior-threaded Bottle Finishes
(Mid 1880s - present)



Hutchinson "Spring" Stopper
(1879-1915)



"Lightning" Stopper
(Mostly 1800s - 1920s)



"Crown" Cap Bottles (1892 - present)

Colors of Bottle Glass

The color of glass is based largely on the minerals used to make it. While glass color is not as precise a dating tool as mold seams or finishes, it can provide helpful clues.



"Black" glass (iron oxide)

- Very deep olive-green (looks black until you hold it up to the light)
- Very thick (for strength), often with bubbles or other impurities
- The earliest type of glass found in most parts of California, pre-1880s

"Solarized" or sun-colored glass

- Amethyst, cobalt, aqua, pale yellow (colors darker with longer sun exposure)
- Sometimes with an iridescence caused by sun/heat
- Pre-World War I

Clear glass

- Most likely dates to 1920s or later (*check those mold seams!*)



"Black" Glass



"Solarized" Amethyst Glass, Colored by Sun Exposure

A Final Note about Trademarks

Many manufacturers of bottles or bottle contents put advertising on the bottle, in the form of paper labels (usually missing in older sites) or embossed lettering. In the 1930s, many manufacturers also started putting code numbers, letters, and symbols on bottle bases. These symbols can help you determine when and where a bottle was made – sometimes right down to the factory and the day. Many manufacturers who are still in business (for example, Clorox and Owens-Illinois) keep archives of this information, and much of it is available on their company web sites.

Other Sources of Information

The CAL FIRE Reference Manual and Study Guide contains dozens of pages of illustrations and descriptions useful to date bottles and other historic artifacts that may be found on CAL FIRE projects. There are several other field guides for identifying and dating historic-period bottles, cans, and other artifacts. One is the Inter-Mountain Antiquities Computer, System (IMACS) Field Guide used by archaeologists in Nevada, Utah, Idaho, and several other western states available from the Nevada State Office of Historic Preservation, Carson City. Another is the "Field Guide to Identifying Historic Artifacts," compiled by historical archaeologists R. Allen, A. Medin, and S. Baxter (Past Forward, Inc., Richmond, California). For very detailed information and illustrations on bottle types, mold seams, and other characteristics, go to the Bureau of Land Management's web site on historic-era bottles or the Department of Parks and Recreation Artifact Type Collection

www.blm.gov/historic_bottles/index.htm

www.parks.ca.gov/default.asp?page_id=22207

<http://www.indiana.edu/~e472/cdf/clorox.shtml>

When in doubt – write it down (or take a picture) and look it up later!